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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/002,602	11/13/2001	James E. Amonette	23-59244	2928

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EXAMINER

ROSENBERGER, RICHARD A

ART UNIT	PAPER NUMBER
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2877

DATE MAILED: 12/15/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/002,602

Applicant(s)

AMONETTE ET AL.

Examiner

Richard A Rosenberger

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-63 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 9-29, 38-42, 47-50, 52-53, 62 is/are allowed.
- 6) ☒ Claim(s) 1, 6, 8, 30-37, 43-46, 51, 54-61 and 63 is/are rejected.
- 7) ☒ Claim(s) 2-5 and 7 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5,6,8. 6) ☐ Other:

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1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 6 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Watanabe et al (US 4,436,428).

The reference shows in figure 20, a photoacoustic sample array vessel having at least two cells (614, 622) connected to the vessel body, the sample cells having a space between them. The acoustic wave is transmitted from the sample cells to the acoustic detector through the space between the sample cells. It would have been obvious to choose the material, such as a gas in the specific embodiment shown, to “enhance” the transmission, and thus the detection, of the acoustic wave. The detector is affixed to the body and is connected to a photoacoustic spectroscopy system.

4. Claim 30 is rejected under 35 U.S.C. 102(b) as being anticipated by Watanabe et al (US 4,436,428).

In figure 6 of the reference an embodiment is shown in which there are two sample cells (57, 58). There is at least one acoustic detector (either 60 or 62) connected to the sample cells to receive acoustic waves from the sample cells.

In figure 20 of the reference an embodiment is shown in which there are multiple sample cells (614, 622). There is at least one acoustic detector (634) connected to the multiple sample cells to receive acoustic waves from the multiple sample cells.

In both embodiments the parts of the arrangements are supported such that the acoustic detector (634) is in physical contact with the multiple sample cells, and the contact is maintained.

5. In Claims 31-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Watanabe et al (US 4,436,428).

In the embodiment of figure 6 (see above), the acoustic detector is mounted on the outer wall of the sample cell; it is clearly sized and shaped to be so mounted.

Although the reference uses a particular type of detector to detect the acoustic waves from the excited samples in the sample cells, it would have been obvious to use other known acoustic detectors to detect the acoustic waves in a manner known in the art; the preference in the reference for the particular

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detectors of the reference does not remove the knowledge of other detectors from the art no the knowledge that they will work to detect acoustic waves as otherwise known. Using clamps or the like to mount such known detectors to the wall of the detector would have been obvious. The cells can be made of any shape that is convenient.

6. Claim 43 is rejected under 35 U.S.C. 102(b) as being anticipated by Watanabe et al (US 4,436,428).

See figure 6 of the reference, which shows a body having multiple sample cells (57, 58) for PAS analysis with a transducer (76, 78) positioned at each sample cell to detect signals that emanate from a sample (64, 66) in the sample cells when exposed to an excitation source.

7. Claims 43-46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Watanabe et al (US 4,436,428).

See above. Placing the transducers at any position that is convenient would have been obvious. Using integrated circuitry would have been obvious because such integrated circuitry is well known, and is known to be small and be efficient.

8. Claims 51, 54-61 and 63 are rejected under 35 U.S.C. 103(a) as being unpatentable over Watanabe et al (US 4,436,428).

Figure 6 of the reference shows a system with two cells. It would have been obvious to make a similar arrangement with four or more cells in a 2xn array by duplicating the illustrated 2-cell structure. Thus would provide a larger array of test areas in a structure which is more compact than having several separate instruments.

The cells of the reference are sealed with plates. It would have been obvious to vary the exact manner in which the cells are sealed by such a plate. It is known to calibrate measuring instruments of all kinds, and would have been obvious to calibrate the instruments such as is shown by the reference in order to obtain the benefit of accuracy that calibration provides. The reference shows using air-coupled transducers; the use other known transducers would have been obvious.

9. The art does not appear to teach or suggest filling the spaces between the cells in a multiple cell arrangement of the sort claimed with a solid material that enhances transmission from the sample to the detector. Thus claims 2 and 3 contain allowable subject matter. The art does not appear to teach or suggest the use of one or more “acoustic fins” in a multiple cell arrangement of the sort claimed, thus claims 4-6 contain allowable subject matter, as do claims 13-16, 26, and 39. The art does not appear to teach or suggest the use of special arrangements designed to minimize reflections of the acoustic signals, nor the use of a “reflection collection bar” to receive the acoustic waves. The art does not appear to teach or suggest the

use of a reflective plate beneath the cells, the plate being transmissive to acoustic waves and reflective of light. Thus claims 17, 27-29, 47-50 and 52-53 are allowable. The art does not appear to teach the claimed structure with a centrally located "post collector". Thus claimed 38-42 are allowable. The art does not appear to teach the claimed use of a microtiter plate having multiple wells in a PAS system. Thus claim 62 is allowable. Claims 2-7 above are objected to as being dependent upon unallowed claim 1. claims 9-29, 38-42, 47-50, 52-53 and 62 are allowable.


10. The reference to Patel et al (US 4,276,780) shows the use of a kind of "acoustic fin" to acoustically couple a sample to a detector. The art does not appear to teach or suggest using such a "fin" in an embodiment with multiple samples.

11. Papers related to this application may be submitted to Group 2800 by facsimile transmission. The faxing of such papers must conform to the notice published in the Official Gazette, 1096 OG 30 (15 November 1989). The fax number is (703) 872-9306

Any inquiry concerning this communication or earlier communications from the examiner should be directed to R. A. Rosenberger whose telephone number is (703) 308-4804.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0956.

R. A. Rosenberger
9 December 2003



Richard A. Rosenberger
Primary Examiner